IN THE CLAIMS:

The text of all pending claims, (including withdrawn claims) is set forth below. Cancelled and not entered claims are indicated with claim number and status only. The claims as listed below show added text with underlining and deleted text with ~~strikethrough~~. The status of each claim is indicated with one of (original), (currently amended), (cancelled), (withdrawn), (new), (previously presented), or (not entered).

Please AMEND claims 1, 14, 18, 19, and 63, and ADD new claim 70 in accordance with the following:

1. (CURRENTLY AMENDED) ~~An~~ A computer readable information storage medium encoded with instructions ~~for use with~~used by a recording and/or reproducing apparatus to enable audiovisual display of audio/video (AV) data in an interactive mode, the medium comprising:

the audio/video (AV) data; and

interactive data to be reproduced with the AV data by the recording and/or reproducing apparatus in ~~an~~ the interactive mode,

wherein:

the interactive data comprises a plurality of ENAV units, and

each of the ENAV units corresponds to a portion of the AV data and has a size less than a predetermined size.

2. (ORIGINAL) The information storage medium of claim 1, comprising an area in which the plurality of ENAV units are continuously recorded.

3. (ORIGINAL) The information storage medium of claim 1, wherein:

the interactive data comprises link information specifying a relation between the AV data and the corresponding ENAV units, and

the link information is described using a structure of the AV data.

4. (ORIGINAL) The information storage medium of claim 1, wherein:

the interactive data comprises link information specifying a relation between the AV data and the corresponding ENAV units, and

the link information is described using reproduction time information of the AV data.

5. (ORIGINAL) The information storage medium of claim 1, wherein:

the interactive data comprises link information specifying a relation between the AV data and the corresponding ENAV units, and

the link information is described using reproduction location information of the AV data.

6. (ORIGINAL) The information storage medium of claim 1, wherein each of the ENAV units comprises at least one markup resource.

7. (ORIGINAL) The information storage medium of claim 4, wherein each of the ENAV units comprises:

at least one ENAV page including a markup resource, and

the ENAV page includes synchronization information indicating a time at which to display the ENAV page.

8. (ORIGINAL) The information storage medium of claim 7, wherein the ENAV page comprises a markup document.

9. (ORIGINAL) The information storage medium of claim 8, wherein the markup document comprises a startup file including the link information.

10. (ORIGINAL) The information storage medium of claim 8, wherein the markup document comprises a schedule file including the link information.

11. (ORIGINAL) The information storage medium of claim 8, wherein corresponding synchronization information is recorded in each ENAV page including the markup resource.

12. (ORIGINAL) The information storage medium of claim 11, wherein:

the AV data comprises DVD-Video data having corresponding presentation time stamps, and

the link information and the synchronization information are described using the presentation time stamp of the corresponding DVD-Video data.

13. (ORIGINAL) The information storage medium of claim 11, wherein:

the AV data is DVD-Video data having corresponding logical block locations, and

the link information and the synchronization information are described using logical block location information of the corresponding DVD-Video data.

14. (CURRENTLY AMENDED) ~~An~~ A computer readable information storage medium ~~for~~ ~~use with~~encoded with instructions used by a recording and/or reproducing apparatus to enable audiovisual display of audio/video (AV) data in an interactive mode, the medium comprising:

the audio/video (AV) data; and

interactive data to be reproduced by the recording and/or reproducing apparatus with the AV data in ~~an~~ the interactive mode,

wherein:

the interactive data comprises a plurality of ENAV units,

each of the ENAV units is smaller than a predetermined size, and

each ENAV unit includes a start page stored with a predetermined start file name recognized by the recording and/or reproducing apparatus to associate and/or control the buffering of the ENAV unit with the corresponding AV data during the interactive mode.

15. (ORIGINAL) The information storage medium of claim 14, wherein each of the ENAV units comprises:

at least one ENAV page, and

the start page is one of the ENAV pages.

16. (ORIGINAL) The information storage medium of claim 14, wherein the interactive data comprises a markup document and markup resources linked to the markup document.

17. (ORIGINAL) The information storage medium of claim 14, wherein the AV data comprises DVD-Video data.

18. (CURRENTLY AMENDED) ~~An~~ A computer readable information storage medium ~~for~~ ~~use with~~encoded with instructions used by a recording and/or reproducing apparatus to enable audiovisual display of audio/video (AV) data in an interactive mode, the medium comprising:

the audio/video (AV) data; and

interactive data to be reproduced by the recording and/or reproducing apparatus with the AV data in ~~an~~ the interactive mode,

  wherein:

    the interactive data comprises a plurality of ENAV units,

    each of the ENAV units is smaller than a predetermined size, and

    each ENAV unit includes a start page stored with a predetermined directory file name recognized by the recording and/or reproducing apparatus to associate and/or control the buffering of the ENAV unit with the corresponding AV data during the interactive mode.

  19. (CURRENTLY AMENDED) ~~An~~ A computer readable information storage medium ~~for use with~~ encoded with instructions used by a recording and/or reproducing apparatus to enable audiovisual display of audio/video (AV) data in an interactive mode, the medium storing:

    the audio/video (AV) data; and

    interactive data for use by the recording and/or reproducing apparatus for reproducing the AV data in ~~an~~ the interactive mode,

  wherein:

    the interactive data includes at least one ENAV page, and

    at least one of the ENAV pages includes control command information for an ENAV buffer which the recording and/or reproducing apparatus uses to buffer the ENAV page.

  20. (ORIGINAL) The information storage medium of claim 19, wherein the control command information commands existing data stored in the ENAV buffer to be discarded.

  21. (ORIGINAL) The information storage medium of claim 19, wherein:

  the interactive data is divided into a plurality of ENAV units, and

  each of the ENAV units includes a corresponding one of the ENAV pages.

  22. (ORIGINAL) The information storage medium of claim 21, wherein the control command information commands a buffered ENAV unit stored in the ENAV buffer to be discarded and another ENAV unit to be read into the ENAV buffer.

  23. (ORIGINAL) An apparatus for recording and/or reproducing audio/video (AV) data in an interactive mode, comprising:

an ENAV buffer which buffers interactive data for reproducing the AV data in the interactive mode, where the interactive data is divided into a plurality of ENAV units and each of the ENAV units has a size that is less than a predetermined size;

an ENAV buffer manager which controls the ENAV buffer so that the interactive data is read in and discarded in one or more units of the ENAV units; and

a reproducing unit that reproduces the AV data in the interactive mode using the interactive data from the ENAV buffer.

24. (ORIGINAL) The apparatus of claim 23, wherein the ENAV buffer comprises a plurality of ENAV unit buffers, and a size of each of the ENAV unit buffers is at or greater than the predetermined size of each of the ENAV units.

25. (ORIGINAL) The apparatus of claim 23, wherein the ENAV buffer manager

refers to the interactive data to detect link information between the AV data and the ENAV units and which is described using a structure of the AV data, and

controls the ENAV buffer using the detected link information so that an ENAV unit is read in before a display of a portion of the AV data that corresponds to the ENAV unit.

26. (ORIGINAL) The apparatus of claim 23, wherein the ENAV buffer manager:

refers to the interactive data to detect link information between the AV data and the ENAV units and which is described using a reproduction time information of the AV data, and

controls the ENAV buffer using the detected reproduction time information so that an ENAV unit is read in before a display of a portion of the AV data that corresponds to the ENAV unit.

27. (ORIGINAL) The apparatus of claim 23, wherein the ENAV buffer manager:

refers to the interactive data to detect synchronization information recorded in a markup document for each ENAV page in a corresponding ENAV unit, and

controls the ENAV buffer using the detected synchronization information so that an ENAV unit corresponding to the synchronization information is read into the ENAV buffer.

28. (ORIGINAL) The apparatus of claim 27, wherein the ENAV buffer manager further refers to link information between the AV data and the ENAV units to control the ENAV buffer so

that the corresponding ENAV unit is read into the ENAV buffer.

29. (ORIGINAL) The apparatus of claim 28, wherein:

the interactive data includes a markup document and markup resources linked to the markup document,

the markup document includes a startup file in which the link information is recorded, and

the synchronization information is recorded in the markup document corresponding to each ENAV page.

30. (ORIGINAL) The apparatus of claim 28, wherein:

the AV data is DVD-Video data having corresponding presentation time stamps, and

the link information and the synchronization information are described by using a corresponding presentation time stamp of the DVD-Video data.

31. (ORIGINAL) The apparatus of claim 28, wherein:

the AV data is DVD-Video data having corresponding logical blocks, and

the link information and the synchronization information are described using corresponding logical block information of the DVD-Video data.

32. (ORIGINAL) An apparatus for reproducing audio/video (AV) data in an interactive mode, comprising:

an ENAV buffer which buffers interactive data for reproducing the AV data in the interactive mode, where the interactive data is divided into a plurality of ENAV units, and each of the ENAV units is smaller than a predetermined size;

an ENAV buffer manager which controls the ENAV buffer so that, if a start page having a predetermined file name is found, a corresponding one of the ENAV units is read into the ENAV buffer; and

a reproducing unit that reproduces the AV data in the interactive mode using the interactive data from the ENAV buffer.

33. (ORIGINAL) An apparatus for reproducing audio/video (AV) data in an interactive mode, comprising:

an ENAV buffer which buffers interactive data for reproducing the AV data in the

interactive mode, where the interactive data is divided into a plurality of ENAV units, and each of the ENAV units is smaller than a predetermined size;

an ENAV buffer manager which controls the ENAV buffer so that a corresponding one of the ENAV units is read into the ENAV buffer when a directory with a predetermined name is detected; and

a reproducing unit that reproduces the AV data in the interactive mode using the interactive data from the ENAV buffer.

34. (ORIGINAL) The apparatus of claim 32, wherein the ENAV unit has at least one ENAV page and the start page is one of the ENAV pages.

35. (ORIGINAL) The apparatus of claim 32, wherein the interactive data includes a markup document and markup resources linked to the markup document.

36. (ORIGINAL) A method of reproducing audio/video (AV) data in an interactive mode comprising:

buffering interactive data for reproducing in the interactive mode the AV data by reading in and discarding the interactive data in one or more units of the ENAV units, wherein each of the ENAV units is smaller than a predetermined size; and

reproducing the AV data in the interactive mode using the buffered interactive data.

37. (ORIGINAL) The method of claim 36, wherein:

the buffering the interactive data comprises reading one of the ENAV units before a display of a unit of the AV data corresponding to the read one ENAV unit by referring to link information between the AV data and the ENAV units, and

the link information is described by using a structure of the AV data.

38. (ORIGINAL) The method of claim 36, wherein:

the buffering the interactive data comprises reading one of the ENAV units before a display of a unit of the AV data corresponding to the one ENAV unit by referring to link information between the AV data and the ENAV units, and

the link information is described using a reproduction time information of the AV data.

39. (ORIGINAL) The method of claim 36, wherein:

each of the ENAV pages includes a markup document including synchronization information, and

the buffering the interactive data comprises reading one of the ENAV units corresponding to the synchronization information by referring to the synchronization information recorded in the markup document of the ENAV page corresponding to the ENAV unit.

40. (ORIGINAL) The method of claim 39, wherein the buffering the interactive data further comprises reading the corresponding one ENAV unit by referring to link information between the AV data and the ENAV units.

41. (ORIGINAL) The method of claim 40, wherein:

the interactive data comprises a markup document and markup resources linked to the markup document,

the markup document comprises a startup file in which the link information is recorded, and

the synchronization information is recorded in the markup document corresponding to each ENAV page.

42. (ORIGINAL) The method of claim 41, wherein:

the AV data is DVD-Video data having corresponding presentation time stamps, and

the link information and the synchronization information are described using the corresponding presentation time stamp of the DVD-Video data.

43. (ORIGINAL) The method of claim 41, wherein:

the AV data is DVD-Video data having corresponding logical blocks, and

the link information and the synchronization information are described using logical block information of the DVD-Video data.

44. (ORIGINAL) The information storage medium of claim 1, wherein:

an amount Lr of the AV data read for each corresponding ENAV unit to be read is

$$Lr > ((2 \times Tj + Le/Vr) \times Vo \times Vr)/(Vr - Vo),$$

Tj denotes a time required to read the corresponding ENAV unit by a pickup of the

recording and/or reproducing apparatus,

Le denotes the size of an ENAV unit,

Vr denotes a speed with which the AV data is read from the information storage medium, and

Vo denotes a decoding speed with which the read AV data is decoded.

45. (ORIGINAL) The apparatus of claim 23, wherein:

an amount Lr of the AV data read for each corresponding ENAV unit to be read is

$$Lr > ((2 \times Tj + Le/Vr) \times Vo \times Vr)/(Vr - Vo),$$

Tj denotes a time required to read the corresponding ENAV unit by a pickup of the apparatus,

Le denotes the size of the corresponding ENAV unit,

Vr denotes a speed with which the AV data is read from an information storage medium, and

Vo denotes a decoding speed with which the read AV data is decoded.

46. (ORIGINAL) The method of claim 36, wherein:

an amount Lr of the AV data read for each corresponding ENAV unit to be read is

$$Lr > ((2 \times Tj + Le/Vr) \times Vo \times Vr)/(Vr - Vo),$$

Tj denotes a time required to read the corresponding ENAV unit by a pickup from a disc,

Le denotes a size of the corresponding ENAV unit,

Vr denotes a speed with which the AV data is read from the disc, and

Vo denotes a decoding speed with which the read AV data is decoded.

47. (ORIGINAL) A recording and/or reproducing apparatus for reproducing first data in an interactive mode, comprising:

a buffer which buffers units of interactive data for reproducing corresponding portions of the first data in the interactive mode;

a buffer manager which controls the buffer so that a corresponding one of the units is read into the buffer; and

a reproducing unit that reproduces the first data in the interactive mode using the interactive data from the buffer,

wherein the reproducing unit and the buffer manager control the reproduction and

buffering such that:

      an amount Lr of the first data read by the recording and/or reproducing apparatus for each corresponding unit to be read by the recording and/or reproducing apparatus is $Lr > ((2 \times Tj + Le / Vr) \times Vo \times Vr)/(Vr - Vo)$,

      Tj denotes a time required to read the corresponding unit into the recording and/or reproducing apparatus,

      Le denotes a size of the corresponding unit,

      Vr denotes a speed with which the first data is read by the recording and/or reproducing apparatus, and

      Vo denotes a decoding speed with which the read first data is decoded by the reproducing unit.

      48. (ORIGINAL) The recording and/or reproducing apparatus of claim 47, wherein:

      the first data is organized in a first directory,

      the interactive data is organized in an interactive directory other than the first directory,

      the interactive directory includes folders in which corresponding units of the interactive data are organized, and

      the recording and/or reproducing apparatus detects one of the folders having a predetermined name, and buffers a corresponding unit of the interactive data from the detected folder having the predetermined name.

      49. (ORIGINAL) The recording and/or reproducing apparatus of claim 48, wherein the recording and/or reproducing apparatus detects a command from a file in the detected folder, and the buffer manager is controlled by the detected command to buffer the corresponding unit from the folder before the corresponding portion of the first data is read by the recording and/or reproducing apparatus.

      50. (ORIGINAL) The recording and/or reproducing apparatus of claim 47, wherein:

      the first data is organized in a first directory,

      the interactive data is organized in an interactive directory other than the first directory,

      the interactive directory includes folders in which the units of the interactive directory are organized,

      the recording and/or reproducing apparatus is referred to one of the folders in the

interactive directory during reproduction of the first data in the interactive mode, and detects a command from a file in the referenced folder, and

the buffer manager is controlled by the detected command to buffer the corresponding unit from the folder before the corresponding portion of the first data is read.

51. (ORIGINAL) The recording and/or reproducing apparatus of claim 50, wherein the file further includes a command to delete one of the units stored in the buffer in which the corresponding unit is to be preloaded.

52. (ORIGINAL) The recording and/or reproducing apparatus of claim 47, wherein the first data is organized in a VIDEO_TS directory, the interactive data is organized in a DVD_ENAV directory other than the VIDEO_TS directory, and each unit of the interactive data is organized in a corresponding folder of the DVD_ENAV directory.

53. (ORIGINAL) The recording and/or reproducing apparatus of claim 52, wherein the DVD_ENAV directory includes a markup document which includes link information which associates the folders with the first data in the VIDEO_TS so as to allow the portion of the reproduced first data to be reproduced with a corresponding unit of the interactive data read from the corresponding folder.

54. (ORIGINAL) The recording and/or reproducing apparatus of claim 47, wherein the first data and the interactive data read by the recording and/or reproducing apparatus are stored on a storage medium, the first data is stored in a first area of the storage medium, and the interactive data is stored in a second area of the storage medium other than the first area.

55. (ORIGINAL) A recording and/or reproducing apparatus for reproducing first data in an interactive mode, comprising:

a buffer which buffers units of interactive data for reproducing corresponding portions of the first data in the interactive mode;

a buffer manager which controls the buffer so that a corresponding one of the units is read into the buffer; and

a reproducing unit that reproduces the first data in the interactive mode using the interactive data from the buffer,

wherein the first data is organized in a first directory, and the interactive data is organized in an interactive directory logically separated from the first directory.

56. (ORIGINAL) The recording and/or reproducing apparatus of claim 55, wherein:

the interactive directory includes folders in which corresponding units of the interactive data are organized, and

the recording and/or reproducing apparatus detects a folder having a predetermined name, and buffers a corresponding unit of the interactive data from the detected folder having the predetermined name.

57. (ORIGINAL) The recording and/or reproducing apparatus of claim 56, wherein the recording and/or reproducing apparatus detects a command from a file in the detected folder, and the buffer manager is controlled by the detected command to buffer the corresponding unit from the folder before the corresponding portion of the first data is read.

58. (ORIGINAL) The recording and/or reproducing apparatus of claim 55, wherein:

the interactive directory includes folders in which the units of the interactive directory are organized,

the recording and/or reproducing apparatus is referred to one of the folders in the interactive directory during reproduction of the first data in the interactive mode, and detects a command from a file in the referenced folder, and

the buffer manager is controlled by the detected command to buffer the corresponding unit from the folder before the corresponding portion of the first data is read.

59. (ORIGINAL) The recording and/or reproducing apparatus of claim 58, wherein the file further includes a command to delete one of the units stored in the buffer in which the corresponding unit is to be preloaded.

60. (ORIGINAL) The recording and/or reproducing apparatus of claim 55, wherein the first directory comprises a VIDEO_TS directory, the interactive directory is a DVD_ENAV directory having folders, and each unit of the interactive data is organized in a corresponding folder of the DVD_ENAV directory.

61. (ORIGINAL) The recording and/or reproducing apparatus of claim 60, wherein the DVD_ENAV directory includes a markup document which includes link information which associates the folders with the first data in the VIDEO_TS so as to allow the portion of the reproduced first data to be reproduced with a corresponding unit of the interactive data read from the corresponding folder.

62. (ORIGINAL) The recording and/or reproducing apparatus of claim 55, wherein the first data and the interactive data read by the recording and/or reproducing apparatus are stored on a storage medium, the first data is stored in a first area of the storage medium, and the interactive data is stored in a second area of the storage medium other than the first area.

63. (CURRENTLY AMENDED) An A computer readable information storage medium for use with encoded with instructions used by a recording and/or reproducing apparatus to enable audiovisual display of audio/video (AV) data in an interactive mode, the medium comprising:

first data in a first area of the information storage medium and organized in a first directory; and

interactive data in an interactive area of the information storage medium other than the first area and organized in an interactive directory,

wherein:

the interactive data comprises a plurality of units,

each of the units corresponds to a portion of the first data,

the interactive directory includes folders in which corresponding units of the interactive data are organized, and

the recording and/or reproducing apparatus is referred to one of the folders and buffers a corresponding unit of the interactive data from the referenced folder into a buffer to be reproduced by the recording and/or reproducing apparatus with the first data in an the interactive mode.

64. (ORIGINAL) The information storage medium of claim 63, wherein the referenced folder has a predetermined name which is recognized by the recording and/or reproducing apparatus as referring to a corresponding one of the folders having the unit to be buffered.

65. (ORIGINAL) The information storage medium of claim 64, wherein the referenced

folder has a file including a command, and a buffer manager of the recording and/or reproducing apparatus is controlled by the command to buffer the corresponding unit from the folder before the corresponding portion of the first data is read.

66. (ORIGINAL) The information storage medium of claim 63, wherein at least one of the folders includes a command such that, when the recording and/or reproducing apparatus is referred to the at least one of the folders in the interactive directory during reproduction of the first data in the interactive mode and detects a command from a file in the referenced folder, a buffer manager is controlled by the detected command to buffer the corresponding unit from the at least one folder before the corresponding portion of the first data is read.

67. (ORIGINAL) The information storage medium of claim 66, wherein the file further includes a command to delete one of the units stored in the buffer in which the corresponding unit is to be preloaded.

68. (ORIGINAL) The information storage medium of claim 63, wherein the first directory comprises a VIDEO_TS directory, the interactive directory is a DVD_ENAV directory having folders, and each unit of the interactive data is organized in a corresponding folder of the DVD_ENAV directory.

69. (ORIGINAL) The information storage medium of claim 68, wherein the DVD_ENAV directory includes a markup document which includes link information which associates the folders with the first data in the VIDEO_TS so as to allow the portion of the reproduced first data to be reproduced with a corresponding unit of the interactive data read from the corresponding folder.

70. (NEW) The apparatus of claim 23, wherein the predetermined size of the ENAV units corresponds to a size of each of the ENAV unit buffers, and the combined size of the ENAV unit buffers is less than the entire size of the interactive data.